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TITLE: THIN FILM TRANSISTOR

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ABSTRACT:

PURPOSE: To obtain an TFT structure having excellent element characteristics and high reliability for a long period of time by forming a TFT element on an under protection film consisting of the material same as an insulating film which may be used for a gate insulating film of TFT provided on a glass substrate.

CONSTITUTION: A thin film transistor forms a silicon oxide 2 as the under protection film to the entire surface on a sodalime glass 1 and also forms thereon as I type non-single crystalline silicon semiconductor film 3. Next, after executing the etching process, laser annealing is conducted for active layer and an N type conductive non-single crystalline silicon film 4 is formed thereon. Next, after patterning the non-single crystalline silicon film 4 leaving the non- single crystalline silicon film 4 in the source drain region

4, hydrogen plasma processing is executed to form a gate oxide film 5 with the
same material as the under protection film 2. Thereafter, contact hole of the
source, drain region is formed and an aluminum electrode 6 is formed thereon.
As a result, invasion of impurity into active layer and element of a thin film
transistor can be suppressed and a thin film transistor having high mutual
conductance and high electric field effect mobility can be obtained.